REMARKS

This is an RCE of U.S. Application No. 09/770,518, filed on January 26, 2001. Claims 52, 55, 56, 62, 64-66, 69, 70, 76, 78-80, 83, 84, 90, 92, and 93 are pending before this amendment. Claims 52 and 80 are amended and new claims 94-95 are added in this amendment to clarify the subject matter Applicants regard as their invention. Support for the claim amendments and the new claims 94-95 is found in the specification (e.g., Example 1, 4, 8, and 9 as well as on page 23, lines 7-26 of the specification as originally filed.). No new matter is introduced. Upon entry of this amendment, claims 52, 55, 56, 62, 64-66, 69, 70, 76, 78-80, 83, 84, 90, 92, and 93-95 are pending.

Claim Rejections – 35 USC § 103

Claims 52, 55-56, 62, 64-66, 69-70, 76, 78-80, 83-84, 90, 92-93 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Petri *et al.* (EP 0842 605 A1) in view of Belfer *et al.* (U.S.P.N. 6,106,854). The Examiner contends that it would have been obvious to increase the ethanol concentration as taught by Belfer by adding more of ethanol to Petri's composition.

Claims 52 and 80 are amended to recite the drying time for the flash-dry composition of the present invention. Applicants submit that the newly amended claims are patentably over the cited references.

The examiner has consistently argued during prosecution that although Petri fails to teach higher concentrations of ethanol in the compositions disclosed therein, Belfer teaches that higher concentration values of ethanol can be used with hydrogen peroxide compositions. Applicants, in turn, have argued that at least two of the three elements necessary in establishing a *prima facie* case of obviousness have not been met. First, the combination of references are missing an element in the pending claims. Namely, neither of the references alone or in combination teach

or suggest a flash-dry disinfectant composition, an important element of the pending claims. Second, Applicants have argued that there is no motivation to combine the references as suggested by the Examiner. The Examiner, in turn, has argued that Belfer provides such a motivation being that the reference teaches that ethanol acts as a biocide agent. These two points of contention will be addressed in greater detail below.

With respect to the flash-dry component, Applicants still maintain that the Petri composition is not a flash-dry composition. As described in the pending application, a flash-dry composition comprises any (liquid) flash vaporization component which is able to impart to the composition a flash vaporization component, so as to leave an essentially dry surface having an antimicrobial agent deposited thereon. Thus, a spray-on composition that leaves a surface wet or moist for an extended period of time cannot be classified as a flash-dry composition.

As clearly evident from the previously submitted Declaration under 37 C.F.R. § 1.132 filed on 1/24/2007, the drying time of the Petri compositions is different from a flash-dry composition. Whereas the presently claimed composition has a drying time of under six minutes, the Petri composition has a drying time of over 25 minutes. The current Office Action alleges that the evidence is not commensurate with the scope of the claims being that the claims do not recite any time intervals. However, flash-dry is a term of art that would be recognized by one of ordinary skill in the art. That is, based on the evidence provided, one of ordinary skill in the art would recognize that the compositions described in Petri do not constitute flash-dry compositions. Thus, this element is not taught or suggested in Petri.

Nonetheless, in order to advance the prosecution of this case and to place the claims in conditions for allowance, Applicants have amended claims 52 and 80 to add the limitation of a "drying time" of the flash-dry disinfectant composition of within 10 minutes. Moreover, Applicants have added claims 94-95 which include the limitation of a "drying time" of the flash-dry disinfectant composition of within 10 minutes. Support for the claim amendments can be found in the specification. For example, support for a drying time duration of less than 10 min,

or less than 5 min are in Example 1, 4, 8, and 9 as well as on page 23, lines 7-26 of the specification as originally filed. For instance, Applicants state that "after 5 minutes of contact time all sample surfaces were left dry." Page 23, lines 14-15. The amended claims are believed to be patentable over the cited references.

The second major point of contention between Applicants and the Examiner regards whether there exists a motivation to combine Petri and Belfer, as suggested by the Examiner. According to the Office Action, Petri, the primary reference, teaches all elements of the presently claimed invention with the exception of the high volume of alcohol. The Examiner notes that Petri discloses the use of ethanol in the disclosed formulations, up to 13% by volume. By combining the reference with Belfer, which presumably teaches formulations with higher volumes of alcohol, the Examiner alleges to arrive at the presently claimed invention. However, a review of the Petri reveals that making such a modification not only would render the Petri formulation unusable for its intended purpose but also teaches away from making the modification as suggested by the Examiner.

The Examiner is reminded that if a proposed modification would render the prior art invention being modified unsatisfactorily for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Referring to Petri, the problem to be solved was developing a spray form of a disinfectant that provides both effective disinfectant performance and can be stored for prolonged periods of time. Petri identified prior art disinfectant formulations comprising peroxides and essential oils which had a host of problems associated with them. For example, such disinfectants were unstable owing primarily to oxidation of the essential oil by the peroxide. Moreover, there were

safety issues associated with these disinfectants. Thus, according to Petri, "inhalation of peroxygen bleach mist" upon spraying on a surface can lead to "nose and/or throat irritation and/or coughing or even lung damage." Page 2, lines 40-50. Furthermore, such disinfectants had the tendency to leak or drip when sprayed onto a vertical surface.

To overcome these problems, Petri developed a formulation containing an essential oil, a peroxide and a shear thinning polymeric thickener, all of which are described as "essential elements." See Page 3-4, Paragraphs 16, 20, and 24. The thickener was an essential component in that it allowed the other two reagents to be combined in a formulation without extensive oxidation. It also decreased the toxicity of vapors sprayed from a container. Moreover, the thickener imparted a viscosity to the formulation that would prevent it from dripping from vertical surfaces. On pages 5-8 of the specification, Petri discusses 'optional' ingredients that can be added to the formulation, such as surfactants and chelating reagents. Furthermore, "the compositions may comprise as an optional ingredient a solvent or a mixture thereof." Page 9, lines 15. A list of possible solvents, including ethanol and isopropyl alcohol is provided. The contents of the disinfectant formulation are dissolved in water to generate a viscous composition that can be sprayed on a surface. Based on the examples provided in Petri, the weight % of water is always greater than 90% of the total composition.

Referring to arguments made in the Office Action, the Examiner suggests adding a substantial amount of ethanol to the Petri compositions. In effect, this would lead to a significant decrease in the weight percentage of water. However, Petri clearly states that the optional solvent can be present within the composition "at a level up to 10% by weight, preferably from 2% to 7% by weight of the composition." Page 29, lines 25-26. The Office Action does not comment on why Petri chooses a maximum of 10% optional solvent. However, as discussed below, Applicants argue that higher percentages of an alcoholic solvent relative to water would in fact render the Petri compositions unusable for their intended purpose and would not result in improvements that the Petri composition intended to solve.

On pages 4-5 of the Petri specification, Petri provides a list of polymers that are capable of being used as shear thinning polymeric thickeners. In particular, Petri discloses using either xanthan gum or a polycarboxylate polymer as a polymeric thickener. In the examples provided, xanthan gum is used as the polymeric thickener. It is well known that xanthan gum is soluble in water but insoluble in alcohols, including ethanol and isopropyl alcohol. Even at low concentrations in water, xanthan gum show a high degree of viscosity. Thus, xanthan gum, when added to water, imparts a gel-like consistency to the aqueous medium.

Replacing the water with an alcoholic solvent, as suggested by the Examiner, would not be feasible owing to the poor solubility of the thickener in the alcoholic solution. If the amount of alcohol suggested by the Examiner were added to the Petri compositions, the resultant solution would likely be an insoluble sludge rather than a sprayable viscous solution. Obviously, such a composition would not be useful for its intended purpose as a spray-on disinfectant composition. Moreover, disruption of the gel-like consistency resulting from addition of alcohol would likely have added detrimental effects. For instance, as discussed above, the polymeric thickening agent, through changing the viscosity of the composition, minimizes oxidation of the essential oils by the hydrogen peroxide. By disrupting the rheological properties of the composition, the alcohol/water solution would no longer be effective in hindering the oxidation reaction, hence rendering the composition unusable for its intended purpose. Equally important, reduction of viscosity or disruption of the gel-like consistency of the Petri compositions through introduction of a significant amount of organic solvent would not result in compositions that provide increased contact time and minimized dripping, essential features of Petri's disinfectant composition.

Based on this analysis, it is clear that Petri indicated that the solvents can be used "at a level up to 10%" being that higher levels would not be amenable to the disclosed disinfectant solutions. Although it is not stipulated why Petri chooses to add a supplemental solvent, such solvents are sometimes added to help dissolve oil-based materials in the water-based sprayable cleaning gel composition (see, for instance, U.S. Patent No. 5,705,470). According to U.S.

Patent No. 6,057,388, the organic solvents can reduce the viscosity of the viscous aqueous solution if the viscosity is too high. However, as already noted, adding an excess of organic solvent would likely have an effect of precipitating the polymeric thickener from the aqueous solution. Moreover, there are other potentially adverse effects with adding organic solvents. For instance, in U.S. Patent 6,057,388 (Column 1, lines 55-62), Patentees make the following comments:

> Many aqueous systems require thickeners in order to be useful for various types of applications. The thickeners are water soluble or dispersible polymers chosen to be sufficiently high to impart desired rheological properties to an aqueous composition containing the thickener. Such polymers tend to be quite viscous when present in high concentrations in an aqueous solution. Reduction of viscosity with added agents, e.g., organic cosolvents is possible, but the use of viscosity reducing agents can pose environmental problems (e.g., contribute to volatile organic compound content) or performance problems.

The volatility of the alcohol solvents also reveals why the proposed modifications suggested in the Office Action would render the Petri composition unusable for its intended purpose. Recall that one of the essential aspects of Petri's invention was using a composition that would not result in "inhalation of oxygen bleach mist" after being sprayed. By replacing water with a much more volatile alcohol, as suggested by the Examiner, the Petri composition would be much more volatile, leading to inhalation of peroxygen bleach mist after being sprayed on a surface. Thus, Petri clearly teaches away from making the proposed modification suggested by the Examiner.

For at least these reasons, Petri does not provide the necessary motivation for modifying the disclosed composition as the Office Action suggests. For reasons already stated on the record, Belfer does not teach a flash-dry composition nor provide adequate motivation for modifying the Petri reference as suggested in the Office Action. The fact that Belfer indicates that alcohols can potentially act as germicides does not provide adequate motivation to substantially increase the amount of alcohol in the Petri composition, particularly in light of the fact that Petri is already using a combination of very powerful germicides. Furthermore, as already discussed, the negative consequences of adding a significant amount of alcohol solvent

to the Petri composition would certainly outweigh any small contribution of ethanol to the disinfectant properties of the Petri composition.

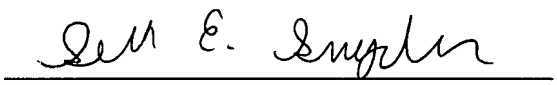
Accordingly, reconsideration and withdrawal of the rejections under section 103 are respectfully requested.

CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration, withdrawal of rejections, and allowance of all claims is earnestly solicited.

The Commissioner is authorized to charge any required fees, including any extension and/or excess claim fees, any additional fees, or credit any overpayment to Goodwin Procter LLP Deposit Account No. 06-0923.

Respectfully submitted for Applicants,



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